CLAIMS

What is claimed is:

1. A method for re-ordering requests for shared resources, the method comprising:

receiving requests for accessing the shared resources from one or more requestors, wherein a plurality of requests may be received from each requestor;

arbitrating between the plurality of requests in such a way so that the plurality of requests from each requestor may be re-ordered in non-FIFO order; and

selecting a next request to access the shared resources based on the re-ordering of requests.

2. The method of claim 1, further comprising:

associating a unique identifier tag with each request.

3. The method of claim 2, further comprising:

using the identifier tag by the requestors to keep track of when the plurality of requests from each requestor are serviced.

4. The method of claim 3, further comprising:

initiating servicing of the selected request; and

transmitting the identifier tag and a strobe signal to a requestor that sent the selected request.

5. The method of claim 4, further comprising:

embedding additional information in the identifier tag that relates to data associated with the request.

6. The method of claim 1, wherein the requests comprise memory requests, and wherein the shared resources comprise a shared memory system.

7. The method of claim 5, wherein the selected request comprises a memory write request.

8. The method of claim 7, wherein the additional information in the identifier tag associated with the memory write request includes a location in buffer memory of data to be written.

9. The method of claim 5, wherein the selected request comprises a memory read request.

10. The method of claim 9, wherein the additional information in the identifier tag associated with the memory read request includes a location in buffer memory in which the data is to be written.

11. A system for re-ordering requests for shared resources, the system comprising:

one or more requestors for sending requests for accessing the shared resources, wherein a plurality of requests may be received from each requestor;

an arbiter for arbitrating between the plurality of requests in such a way so that the plurality of requests from each requestor may be re-ordered in non-FIFO order.

12. The system of claim 11, wherein the requestors associate a unique identifier tag with each request.

13. The system of claim 12, wherein the requestors use identifier tags to keep track of when the plurality of requests from each requestor are serviced.

14. The system of claim 13, wherein the arbiter initiates servicing of the selected request; and transmits the identifier tag and a strobe signal to a requestor that sent the selected request.

15. The system of claim 14, wherein the identifier tag includes additional information that relates to data associated with the selected request.

16. The system of claim 11, wherein the requests comprise memory requests, and wherein the shared resources comprise a shared memory system.

17. The system of claim 15, wherein the selected request comprises a memory write request.

18. The system of claim 17, wherein the additional information in the identifier tag associated with the memory write request includes a location in buffer memory of data to be written.

19. The system of claim 15, wherein the selected request comprises a memory read request.

20. The system of claim 19, wherein the additional information in the identifier tag associated with the memory read request includes a location in buffer memory in which the data is to be written.

21. An apparatus for re-ordering requests for shared resources, the apparatus comprising:

means for receiving requests for accessing the shared resources from one or more requestors, wherein a plurality of requests may be received from each requestor;

means for arbitrating between the plurality of requests in such a way so that the plurality of requests from each requestor may be re-ordered in non-FIFO order; and

means for selecting a next request to access the shared resources based on the re-ordering of requests.

22. The apparatus of claim 21, further comprising:

means for associating a unique identifier tag with each request.

23. The apparatus of claim 22, further comprising:

means for using the identifier tag by the requestors to keep track of when the plurality of requests from each requestor are serviced.

24. The apparatus of claim 23, further comprising:

means for initiating servicing of the selected request; and

means for transmitting the identifier tag and a strobe signal to a requestor that sent the selected request.

25. The apparatus of claim 24, further comprising:

means for embedding additional information in the identifier tag that relates to data associated with the request.

26. The apparatus of claim 21, wherein the requests comprise memory requests, and wherein the shared resources comprise a shared memory system.

27. The apparatus of claim 25, wherein the selected request comprises a memory write request.

28. The apparatus of claim 27, wherein the additional information in the identifier tag associated with the memory write request includes a location in buffer memory of data to be written.

29. The apparatus of claim 25, wherein the selected request comprises a memory read request.

30. The apparatus of claim 29, wherein the additional information in the identifier tag associated with the memory read request includes a location in buffer memory in which the data is to be written.